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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,786	05/13/2002	William D. Doan	121710	1626
23413	7590	12/28/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			WANG, JIN CHENG	
			ART UNIT	PAPER NUMBER
			2672	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/063,786	DOAN ET AL.	
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/21/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/9/2005 has been entered. Claims 1 and 19 have been amended. Claims 14, and 20-31 have been canceled. Claims 1-13 and 15-19 are pending in the present application.

Response to Arguments

Applicant's arguments filed December 9, 2005 have been fully considered but are not found persuasive in view of the new ground(s) of rejection set forth below.

As address below, the Claims 1-13 and 15-19 are unpatentable over Taguchi U.S. Pat. No. 6,584,166 (hereinafter Taguchi), in view of Argiro et al. U.S. Patent No. 5,986,662 (hereinafter Argiro).

Although Taguchi does not explicitly teach the claim limitation "said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format", Taguchi teaches rendering the 3D reconstructed/reformatted image in accordance with the user's instruction, which is the same as saving the 3D reconstructed/reformatted images in accordance with the user's instruction on the memory space of the display device or in the data storage unit 111 of the apparatus of Taguchi.

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Argiro explicitly teaches the claim limitation “said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format”.

Argiro teaches in the Abstract and column 29, lines 1-35 that a report generator and viewer component generates a report based on snap shots of images taken within the examination viewer component. A print and post component posts the report as an HTML file to a web browser for retrieval over the Internet or an intranet wherein the images of the out are converted to PNG format for correct viewing within a web browser. Argiro discloses in column 25, lines 45-57 that the user has manipulated the controls and has determined that a particular view of the image should be saved for later analysis in which one embodiment permits the user to either save a snapshot of the image via selection of snapshot button 270 or record a video of the image as it is shown on the display device via selection of record button 278. Argiro discloses in column 26 **the report including selected snapshots along with formatting information regarding how the selected snapshots are to be organized.** Therefore, Argiro is seen to teach the claim limitation “said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format”.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Argiro's saving of a snapshot of the image in the viewer display by the user into the computer tomographic system of Taguchi which has a user interface including selections for reconstructing the image data for display in a display device. Taguchi's system displays a large number of images (See Figs. 13-14) and the images are stored in the data storage unit 111 for retrieval of each particular image through the user interface (e.g., Taguchi

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column 5, lines 23-58) and the reconstructed images are displayed on the display 116 of the volume data (column 5) wherein the slice or the 3D rendered image is saved to an HTML file according to Argiro. Both Argiro and Taguchi discloses volume data or reconstruction voxel and slices of the three-dimensional image (See Argiro column 22, lines 25-67 and Taguchi column 1, lines 44-65 and column 6, lines 1-5). It would have been obvious because rendering the 3D reconstructed/reformatted image in accordance with the user's instruction as taught in Taguchi is the same as saving the 3D reconstructed/reformatted images in accordance with the user's instruction on the memory space of the display device or in the data storage unit 111 of the apparatus of Taguchi.

Such modification would have been required for saving a slice of the reconstructed image or the reconstructed images to a file or retrieving/storing the reconstructed image from/to the memory device (See Argiro column 29, lines 1-35 and Taguchi column 5, lines 48-58).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi U.S. Pat. No. 6,584,166 (hereinafter Taguchi), in view of Argiro et al. U.S. Patent No. 5,986,662 (hereinafter Argiro).

Re Claims 1 and 19:

Taguchi teaches a method for managing axial images, the method comprising:

Receiving a reconstructed axial image, wherein said reconstructed axial image includes a pre-selected number of completed reconstructed slices, a slice thickness and an interval value (*e.g. Taguchi teaches a reconstruction unit which reconstructs image data on the basis of the real data and virtual data stored in a storage unit wherein the data having a pre-selected number of reconstructed slices, a slice thickness and an interval value and a graphical user interface for setting reconstruction conditions such as setting **slice thickness**, **slice pitch**, the **number of images**; column 5, 7-9 and Figs. 13-15*);

Creating a reformatted axial image in response to said reconstructed axial image (*Taguchi teaches in column 7 reconstructing at least two images with different slice thickness and interval values and selecting one of reconstructed axial images and rendering the reformatted axial image in a display. Taguchi teaches creating a reformatted axial image with the changed **slice thickness**, **slice pitch**, the radius R of the field of view, the effective width W of the field of view, and other parameters, in response to the reconstructed real data of the axial image or the virtual data created from the real data of the axial image; see column 5, 7-9 and Figs. 13-15; Taguchi further discloses in column 9 a resize selection by selecting the names of regions to be examined using pull-down menus for the sizes of small, medium and large images*), wherein said creating includes:

Modifying said slice thickness in response to user slice thickness input (*Modifying the slice thickness using the user interface. Taguchi teaches the number of images is automatically*

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set in accordance with the slice pitch and slice thickness changes; column 9 and Figs. 13-15);
and

Updating said interval value in response to user interval value input (*Taguchi teaches in column 8 changing the helical pitch and setting slice pitch which defines the distance between the center of each reformatted slice or the distance between the central lines of adjacent slices; column 9 and Figs. 13-15);*

Displaying said reformatted axial image in response to user display input (e.g., displaying a 3-D rendering image on the basis of the image data; see column 5, 8-9 and Figs. 13-15).

Although Taguchi does not explicitly teach the claim limitation “said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format”, Taguchi teaches rendering the 3D reconstructed/reformatted image in accordance with the user’s instruction, which is the same as saving the 3D reconstructed/reformatted images in accordance with the user’s instruction on the memory space of the display device or in the data storage unit 111 of the apparatus of Taguchi.

Argiro explicitly teaches the claim limitation “said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format”.

Argiro teaches in the Abstract and column 29, lines 1-35 that a report generator and viewer component generates a report based on snap shots of images taken within the examination viewer component. A print and post component posts the report as an HTML file to a web browser for retrieval over the Internet or an intranet wherein the images of the out are converted to PNG format for correct viewing within a web browser. Argiro discloses in column 25, lines

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45-57 that the user has manipulated the controls and has determined that a particular view of the image should be saved for later analysis in which one embodiment permits the user to either save a snapshot of the image via selection of snapshot button 270 or record a video of the image as it is shown on the display device via selection of record button 278. Argiro discloses in column 26 **the report including selected snapshots along with formatting information regarding how the selected snapshots are to be organized.** Therefore, Argiro is seen to teach the claim limitation "said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary capture image format".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Argiro's saving of a snapshot of the image in the viewer display by the user into the computer tomographic system of Taguchi which has a user interface including selections for reconstructing the image data for display in a display device. Taguchi's system displays a large number of images (See Figs. 13-14) and the images are stored in the data storage unit 111 for retrieval of each particular image through the user interface (e.g., Taguchi column 5, lines 23-58) and the reconstructed images are displayed on the display 116 of the volume data (column 5) wherein the slice or the 3D rendered image is saved to an HTML file according to Argiro. Both Argiro and Taguchi discloses volume data or **reconstruction voxel and slices of the three-dimensional image** (See Argiro column 22, lines 25-67 and Taguchi column 1, lines 44-65 and column 6, lines 1-5). It would have been obvious because rendering the 3D reconstructed/reformatted image in accordance with the user's instruction as taught in Taguchi is the same as saving the 3D reconstructed/reformatted images in accordance with the user's

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instruction on the memory space of the display device or in the data storage unit 111 of the apparatus of Taguchi.

Such modification would have been required for saving a slice of the reconstructed image or the reconstructed images to a file or retrieving/storing the reconstructed image from/to the memory device (See Argiro column 29, lines 1-35 and Taguchi column 5, lines 48-58).

Claim 2:

The claim 2 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the user interval value input including an explicit value for the interval value. However, Taguchi further discloses the claim limitation of the user interval value input including an explicit value for the interval value (Figs. 13-15).

Claim 3:

The claim 3 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the user slice thickness input including an explicit value for the slice thickness. However, Taguchi further discloses the claim limitation of the user slice thickness input including an explicit value for the slice thickness (Figs. 13-15).

Claim 4:

The claim 4 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted axial image in response to the user display input and to the additional completed reconstructed slice. However, Taguchi further discloses the claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted

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axial image in response to the user display input and to the additional completed reconstructed slice (Figs. 13-15 and column 7-9).

Claim 5:

The claim 5 encompasses the same scope of invention as that of the claim 4 except additional claim limitation of receiving at least one additional completed reconstructed slice being performed in response to a user selecting a resume acquire button. However, Taguchi further discloses a button, which resume and acquire reconstructed slice (Figs. 13-15 and column 7-9).

Claim 6:

The claim 6 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of receiving, creating and displaying being performed in an interactive mode. However, Taguchi further discloses the claim limitation of receiving, creating and displaying being performed in an interactive mode (Figs. 13-15 and column 7-9).

Claim 7:

The claim 7 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a render option selection. However, Taguchi teaches a click of the confirm button which render the axial image on a display device.

Claim 8:

The claim 8 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a navigation mode selection. However, Taguchi further discloses a navigation buttons.

Claim 10:

The claim 10 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of an image location selection. However, Taguchi further discloses selecting image location such as the center X, and Y coordinates (Figs. 13-15).

Claim 11:

The claim 11 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a resize selection. However, Taguchi further discloses a resize selection by selecting the names of regions to be examined using pull-down menus for the sizes of small, medium and large images (column 9).

Claim 13:

The claim 13 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of saving the reformatted axial image in a reformat format. However, Taguchi further discloses saving the image data in the data storage unit (column 7-8).

Claims 15-16:

The claim 15 or 16 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of changing/setting slice thickness by a pre-selected value. However, Taguchi further discloses the claim limitation of changing/setting slice thickness by a pre-selected value (Figs. 13-15 and column 7-9).

Claims 17-18:

The claim 17 or 18 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of changing/setting interval value by a pre-selected value. However, Taguchi further discloses the claim limitation of changing/setting interval value by a pre-selected value (Figs. 13-15 and column 7-9).

Re Claims 9 and 12.

The claim 9 or 12 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of annotation and measurement selection and a secondary capture format.

Taguchi is silent to the claim limitation of the annotation and measurement selection.

However, Argiro teaches the claim limitation of the annotation and measurement selection (Argiro column 19-22 and 24 for annotation measurement with a ruler).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the annotation and measurement selection into the computer tomographic system having a user interface including selections for reconstructing the image data for display in a display device (Taguchi column 5-6 and Argiro the Abstract).

Such modification would have been required for additional functionality and thereby suggesting the obvious modification of Taguchi.

Claims 1 and 19 are also rejected under 35 U.S.C. 102(e) as being anticipated by He et al. U.S. Pat. No. 6,141,398 (hereinafter He).

Re Claims 1 and 19:

He teaches a method for managing axial images, the method comprising:

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Receiving a reconstructed axial image, wherein said reconstructed axial image includes a pre-selected number of completed reconstructed slices, a slice thickness and an interval value (e.g. column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8);

Creating a reformatted axial image in response to said reconstructed axial image (e.g. column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8), wherein said creating includes:

Modifying said slice thickness in response to user slice thickness input (*Modifying the slice thickness using the interactive user interface. He teaches the selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*); and

Updating said interval value in response to user interval value input (*Modifying the slice thickness using the interactive user interface. He teaches the interactive selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*);

Displaying said reformatted axial image in response to user display input (*He teaches the interactive selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*), said user display input comprises an instruction to save a current view of said reformatted axial image in a secondary

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capture image format (He discloses archiving of the reconstructed/reformatted images in accordance with the predetermined protocol; see column 7, lines 20-36).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665.

The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

Dylan Yang, P.E.